WASHINGTON STATE DEPARTMENT OF AGRICULTURE

Fertilizer Handbook

Pesticide Management Division
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Why Do I Need To Register A Fertilizer in Washington State

Washington State requires all fertilizer products be registered with the Washington State Department of Agriculture (WSDA). WSDA registers products that make plant nutrient claims, are designed or intended for use as plant nutrients, are distributed as plant nutrients and pass the WSDA-required review of the contents.
The reason fertilizers are required to be registered in Washington State is to protect the State's people, environment and soil. The State's new (1998) fertilizer adulteration laws were enacted to protect human health and the environment by ensuring that all fertilizer meet standards for allowable metals and allowing fertilizer users and purchasers to know what fertilizer products contain.

Washington State Fertilizer Laws & Rules

Washington State's Fertilizer Law was originally adopted in 1967. The initial Commercial Fertilizer Act included regulating the distribution and quality of fertilizers in Washington State through registration. The law was updated several times, however, the most significant changes were added in 1998 with The Fertilizer Registration Act (SSB 6474). This updated law includes: monitoring the levels of nine metals in fertilizers products, requiring specific labeling statements, as well as additional review of waste-derived and micronutrient fertilizers by the Washington State Department of Ecology (Ecology).

Why are metals a concern?

Metals have been shown to accumulate in soils with long-term fertilizer applications. Regulatory limits were established to prevent unsafe levels of metals from accumulating.

Due to public concerns, in 1998 the Washington State Legislature used the Canadian standards as the scientific basis for setting the maximum acceptable cumulative metal additions to soil. These standards are designed to prevent unsafe levels of nine heavy metals (arsenic, cadmium, cobalt, mercury, molybdenum, lead, nickel, selenium and zinc) from accumulating in Washington State soils.

Obtaining Fertilizer Laws & Rules

Fertilizer laws (Chapter 15.54 RCW) and rules (WAC 16-200-695 through 742) may be obtained from the Internet at agr.wa.gov/PestFert/fertilizers, or from the fertilizer registration staff at the number listed in the **Contact Information** section of this handbook.

Updated Information On Registered Fertilizer Products

Metals and company information on fertilizer products registered in Washington State may be obtained from the Internet at agr.wa.gov/PestFert/fertilizers. Choose **"Fertilizer Product Database"** then search by **Product** or by **Registrant.**

How To Register A Fertilizer Product in Washington State

Commercial Fertilizer Product Registration

RCW 15-54.270(4) defines commercial fertilizer as a substance containing one or more recognized plant nutrients and that is used for its plant nutrient content or that is designated for use or claimed to have value in promoting plant growth, and shall include limes, gypsum and manipulated animal and vegetable manures.

Fertilizer registration in Washington State is on a two-year cycle. The fee per product is $50. Registration forms, labels and all other required information listed on the registration checklist are reviewed by registration specialists for compliance with Washington State laws and rules including metals and labeling standards. Waste-derived and micronutrient fertilizers (see definitions section) are also reviewed by the Department of Ecology (Hazardous Waste & Toxics Reduction Program) to determine if the proposed product passes a set of criteria for review of hazardous waste (see Ecology review section for more information).

If a product successfully passes all reviews, it is registered by WSDA and the company receives a registration certificate.

Step-by-Step Registration Information

Timeline for Registration

WSDA's goal is to process new product registrations within 60 days of receipt of a **completed** application (use of the checklist on the back of form 4300A, 4300B and 4300C will help ensure a complete submission). Applications which are incomplete will take longer.

Reminder: Waste-derived and micronutrient products may take longer due to required review by the Department of Ecology, Department of Health and Department of Labor & Industries. This can take up to 90 days.

The following section will describe how to register fertilizer products in Washington State.

New Product Registration

The following items must be submitted with any new product registration application (instructions for completion are printed on the reverse of each form**).** WSDA has made a number of changes to the forms. **Please use the most current two-year registration form.** The form number is printed on the top.

New Product Registration:

- **Application for Registration of Commercial Fertilizers,** Form 4300 A

- **Remittance** of $50.00 per product.

- **Commercial Fertilizer Product Registration,** Form 4300B
  or
  Alternative Registration form for Packaged Single Chemical Compounds, Form 4300C

- **Copies of laboratory analyses** of the nine heavy metals for each product. See Table 1 for details.

- **Product Label:** Enclose the most current label for each product. **Labels are required to have the Washington State Internet Statement on them.**

- **Ecology Questionnaire** for all new products; put the product name(s) on the questionnaire.

Renewal Pre-notification

You will be sent a product renewal form before the expiration date of your product registration. All registrations are on a two-year cycle.

Renewal Registration

The following items must be submitted with any renewal registration application (instructions for completion are printed on the reverse of each form):

- **Application for Registration of Commercial Fertilizers,** Form 4300A

- **Commercial Fertilizer Product Registration**, Form 4300B, **for any changes in metals levels or guaranteed analyses**

- **Remittance** of $50.00 per product
  (RENEWALS ONLY - *Add $10.00 late fee per product if submitted after June 30*)

- **Fertilizer Product Renewal List**
  Put a checkmark next to the products you wish to renew. Leave the others blank.

- **Product Label:** Enclose any labels that have been revised since last year. **Labels are required to have the Washington State Internet Statement on them.**

- **Ecology Questionnaire** for any changes

The Application for Fertilizer Registration Form 4300A (see Figure 1)

The WSDA-issued company number is used to track registration information. All companies are assigned a unique number when they apply for registration. If you currently have products registered, you can find your company number on the last Registration Certificate issued by WSDA. If you are submitting products for the first time, *WSDA will issue you a number.*

Reminder - When completing the application, please include:

- The name and signature of the registrar
- Fax, e-mail and web site information if available

Figure 1. Application for Fertilizer Registration (Form 4300A)

WSDA
Form 4300 A

Washington State Department of Agriculture
Pesticide Management Division
P.O. Box 42591, Olympia, WA 98504-2591
Telephone: (360) 902-2025 FAX: (360) 902-2093
E-mail: fertreg@agr.wa.gov

Please use checklist on back to ensure a complete application .

APPLICATION FOR 2 YEAR REGISTRATION OF COMMERCIAL FERTILIZER

COMPLETE THIS APPLICATION FORM EACH TIME YOU REGISTER	
COMPANY NAME	WSDA ISSUED COMPANY NUMBER
MAILING ADDRESS	FACILITY STREET ADDRESS
CITY, STATE, ZIP CODE	CITY, STATE, ZIP CODE
TELEPHONE NUMBER ( )	MANUFACTURER *(If different than company name listed above left)*
FAX ( )	MAILING ADDRESS
E-MAIL	CITY, STATE, ZIP CODE
WEB SITE ADDRESS	

APPLICANT SIGNATURE & REMITTANCE ADVISEMENT

Number of products at $50.00 each: _____ products x $50.00 = $ _____
(Fee covers current two-year registration cycle.) 7103

If renewed after July 1,
add a penalty fee of $10.00 per product: _____ products x $10.00 = $ _____
7105

Make check payable to: *Washington State Deparment of Agriculture* **TOTAL FEES: $** _____

Checks returned by the bank will be charged a handling fee of $25.00. *(RCW 62A.3.515 (a) and 62A.3.520)*

Company Registrar Name _____ Title _____
PLEASE PRINT

Signature _____ Date _____

NOTE

Your company will receive a WSDA Fertilizer Registration Certificate as confirmation of product registration. You will be sent a product renewal form before the expiration date of your product registration.

FOR DEPARTMENT USE ONLY

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The Commercial Fertilizer Product Registration Form 4300B is used by registrants to list each fertilizer product submitted for registration (see Figure 2). This form is where the exact product name, grade, maximum application rate and metals concentrations must be provided by the registrant. The product name should be exactly as it appears on the product label, including the grade. Incomplete or incorrect product names listed on the 4300B form could result in inadvertent compliance action.

The maximum application rate, when available from the product's label, is listed here as the maximum amount of product that is labeled to be applied to a defined square footage area per year. If you have questions about how to calculate your product's maximum application rate, first see the example provided in the Metals Calculation section of this handbook.

Under Guaranteed Analysis %, enter the percentages of nutrients your label is guaranteeing. These values must match those guaranteed on the label.

Figure 2. Commercial Fertilizer Product Registration (Form 4300B)

WSDA

PLEASE READ INSTRUCTIONS ON REVERSE BEFORE COMPLETING FORMS

COMMERCIAL FERTILIZER PRODUCT REGISTRATION

Form 4300 B

Company Name: ____________ WSDA Issued Company Number: ________

Print Registrar Name: ____________ Date: ____________

Complete Product Name WA Product Reg. No. ________

This product can be applied at the maximum label rate of _____ pounds or ounces (circle one) per _____ sq. ft. or acres (circle one) _____ times a year.

GUARANTEED ANALYSIS %

										LIME			GYPSUM
N		Ca		B		Cu		Mo					
P_2O_5		Mg		Cl		Fe		Na		$CaCO_3$	$MgCO_3$	$CaCO_3$ (eq)	$CaSO_4 2H_2O$
K_2O		S		Co		Mn		Zn					

•Is product waste derived as defined in RCW 15.54.270(34)? Y N

•Is product a micronutrient as defined in RCW 15.54.270(22)? Y N

•Is product a fertilizer material as defined in RCW 15.54.270(11) and contains phosphate? Y N

CO. GUARANTEED MAXIMUM METALS CONCENTRATION (PPM)

As	Cd	Co	Hg	Mo	Ni	Pb	Se	Zn

Non-Detected (ND) or zero values NOT permitted.

Fill out each box under the company (CO.) guaranteed maximum metals concentration (ppm). Use the actual detected metal level from the laboratory sheet or use a greater number to account for variations in the metals levels of more than one source.

If a laboratory analysis for a product indicates **ND (not detected), BDL (below detection level) or MDL (minimum detection limit)** in the "found" column, this means that the true level of that metal was below the minimum level that could be measured by that laboratory. Please do not put ND, BDL, MDL, 0, in the metals-levels boxes on the 4300B form or leave them blank. Use the detection limit value. If, for example, the selenium level is reported MDL, use the value from the lab report for the minimum detectable level. You can use a value greater than this

number if you want to build in a numerical buffer, or you may use a less than symbol (<) to indicate this is a minimum detection limit. Remember that the parts per million (ppm) level of each metal is calculated with the rate of application in a year's time to determine if the product will pass the metals soil loading standards established in Washington.

Your application could take longer to process or will be returned to you if you do not follow these instructions. The application will not be processed if the laboratory analysis (using the required methods) is not included to substantiate the metals levels you report on the form.

Metals Analyses

What method must I use to analyze the total metals contained in my commercial fertilizer?
You must prepare and analyze your commercial fertilizer using U.S. Environmental Protection Agency ("EPA") sample preparation method 3050B (except when preparing a sample for analysis of mercury, see Table 1*). You must analyze your commercial fertilizer for the total concentration of each of the nine metals in each commercial fertilizer using one or more of the EPA analysis methods listed in Table 1 (see below). All methods are described in EPA's SW-846, Third Edition.

Table 1. Sample Preparation and Analysis Methods for Total Metals for WSDA

Metal	Inductively Coupled Plasma (ICP)	Atomic Absorption	Inductively Coupled Plasma Mass Spectroscopy (ICP/MS)
Arsenic (As)	6010, 6010A, 6010B	7060A, 7061A	6020
Cadmium (Cd)	6010, 6010A, 6010B	7131A	6020
Cobalt (Co)	6010, 6010A, 6010B	7201	6020
Lead (Pb)	6010, 6010A, 6010B	7420, 7421	6020
Molybdenum (Mo)	6010, 6010A, 6010B	7480	6020
Nickel (Ni)	6010, 6010A, 6010B	7520, 7521	6020
Selenium (Se)	6010, 6010A, 6010B	7740, 7741A	6020
Zinc (Zn)	6010, 6010A, 6010B	7951	6020
Mercury (Hg)		7470A, 7471A	
Sample* Preparation	3050B	3050B	3050B

* Sample preparation method 3050B cannot provide for an analysis of mercury so when you prepare a sample for analysis of mercury, you must use the sample preparation method established for analysis method 7470A when using method 7470A to analyze your sample and the sample preparation method established for analysis method 7471A when using method 7471A to analyze your product.

Metals Reporting

The metals data that are reported to WSDA on the Commercial Fertilizer Product Registration form (4300 B) are used to determine if the product meets the Washington State standard for annual metals addition to soil. Just as with nutrient guarantees, the metals concentrations listed in the application must accurately represent what is in the product. Fertilizer compliance officials take random samples of fertilizer products, some of which are analyzed for their metals concentrations. Products found out of compliance are subject to enforcement action. **Consider adding a "safety" buffer if your sources vary or you suspect metal level variability (as long as the actual metal level is lower than the reported level.)**

Metals Calculations

To determine whether a commercial fertilizer meets the Washington State standard for metals, WSDA will use the following formula:
[(Pounds of product applied per acre per year) x (metal content of product in ppm)]/ 1,000,000

All nine metals in the product must meet the Washington State standards for the product to be registered (see Table 3).

If specific label directions for use are not available, the department will use the Washington State Application Rates found in WAC 16-200-7063,1 (Table 2).

The Washington State Application Rates were designed using normal agronomic rates that are representative of soil, crop rotation and climatic conditions in Washington State. These rates define typical nutrient addition over a four-year period. To ensure the maximum acceptable cumulative metals additions to soil are not exceeded, WSDA will assume the commercial fertilizer will be applied at the maximum rate as stated on the label or using the rates below. Using the above information, the Registration staff calculates the annual metals addition to soil. Calculated metals loading rates are compared to the Washington State Metals Standards, (the maximum total metal loading for each metal - see Table 3). These standards are based on long-term (45 years) cumulative metals additions to soils, and are expressed as pounds of metal per acre per year.

Because cobalt, molybdenum and/or zinc are also plant nutrients, higher concentrations of these metals are permitted, **provided** those nutrients are guaranteed on the product label. If a fertilizer product contains levels of cobalt, molybdenum and/or zinc at levels that do not meet the Washington State standard, **and** they are not guaranteed on the product's label, then the product would fail to meet the Washington State metals standard and be denied registration. Refer to Table 4 for the minimum percentage allowed to guarantee a secondary or micronutrient.

Table 2. Washington Application Rates

Nutrient	4 Yr. Cumulative Total (lbs/acre
Nitrogen (N)	1600
Phosphorous (as P2O5)	700
Potassium (as K2O)	1600
Boron (B)	12
Calcium (Ca)	800
Chlorine (Cl)	300
Copper (Cu)	10
Iron (Fe)	80
Magnesium (Mg)	400
Manganese (Mn)	40
Molybdenum (Mo)	4
Sulfur (S)	400
Zinc (Zn)	30
Lime (CaCO3 equivalent)	20,000
Gypsum (CaSO4)	16,000

Table 3. Washington State Metals Standards

Metals	Lbs./acre/yr.
Arsenic (As)	.297
Cadmium (Cd)	.079
Cobalt (Co)	.594
Mercury (Hg)	.019
Molybdenum (Mo)	.079
Nickel (Ni)	.713
Lead (Pb)	1.981
Selenium (Se)	.055
Zinc (Zn)	7.329

Sample Calculations

Product with specific directions for use:

Rose & Flower Food, 10-12-15. The product's label provides the following instructions: Feed roses up to three times per year. Each application should consist of 5-15 lbs. Rose & Flower food per 1000 square feet. Based on these directions, the maximum application rate is 15lbs/1000 square feet, 3 times a year. First the rate

needs to be transformed into a rate per acre rather than the 1000 square feet provided.

One acre = 43560 square feet

Therefore: 43560 sq. ft/ 1000 sq. ft = 43.56

This value, 43.56 is the multiplier to determine the total pounds of product per acre.

Therefore: 15 lbs X 43.56 = 653.40 lbs

This yields: 653.40 lbs product/acre

The label allows three applications per year, therefore the total rate would be:

653. 40 lbs acre, 3 times per year

(OR)

1960.2 lbs/acre/year

Now that the application rate is calculated, the metals loading can be calculated. In this example, the product contains 3 ppm of arsenic.

[(1960.2 lbs/acre/year) x (3)]/1,000,000 = 0.0059 lbs. arsenic/acre/year.

This product meets the Washington State standard for arsenic because the calculated metals loading is 0.0059 lbs. arsenic/acre/year, less than the standard of 0.297 lbs. arsenic/acre/year.

Product without specific directions for use:

Urea, 46-0-0. The product's label does not provide specific directions for use. Using the Washington State Application Rate found in Table 2 and the example of arsenic at 3 ppm, the loading for arsenic can be calculated as follows:

Four year cumulative total for nitrogen is 1600 lbs/acre or 1600 lbs/acre/4 years. This corresponds to a rate of 400 lbs/acre/year. Therefore the calculation is:

[(400 lbs/acre/year) x (3 ppm)]/1,000,000 = 0.0012 lbs arsenic/acre/year.

In this example, the product also meets the Washington State standard for arsenic because the calculated metals loading is 0.0012 lbs. arsenic/acre/year, less than the standard of 0.297 lbs. arsenic/acre/year.

The Alternative Registration Form-Packaged Single Chemical Compounds, Form 4300C, is used when a single chemical compound is submitted for registration that has already been registered by another company. The Washington

product registration number can be obtained from the original registrant. WSDA will assign a unique number to your product.

Definition of single chemical compound (fertilizer material): {It}contains nutritive level quantities of one of the primary plant nutrients, N-P-K, has 85% + plant nutrient content present in the form of a single chemical compound or is derived from a plant or animal residue or by-product or natural material deposit that has been processed in such a way that its content of plant nutrients has not been materially changed except by purification and concentration. Some examples are ammonium nitrate, rock phosphate, bone meal, cottonseed meal, or magnesium sulfate.

If you are repackaging and registering a product currently registered by WSDA, do not use this form unless the product meets the definition of single chemical compound. If it does not, please use form 4300B.

Figure 3. Alternative Registration Form-Packaged Single Chemical Compounds, Form 4300C

WSDA
Form 4300 C

ALTERNATIVE REGISTRATION FORM - PACKAGED SINGLE CHEMICAL COMPOUNDS
(Use a separate form for each product registered.)

Washington State Department of Agriculture
P.O. Box 42591
Olympia, WA 98504-2591
Phone: (360) 902-2025
Fax: (360) 902-2093
E-mail: fertreg@agr.wa.gov

Company Name: _____ WSDA Issued Company Number: _____

Complete Product Name: _____ GRADE: _____ WA Product Registration Number: _____

Supplier(s) WA Product Registration Number(s):	Waste Derived or Micronutrient?	Supplier Name:
	W M N/A	
	W M N/A	
	W M N/A	
	W M N/A	
	W M N/A	

This form may be used ONLY if all of the following conditions exist:

(1) You are repackaging a single chemical compound (i.e. urea, MAP, DAP,etc.).

(2) The single chemical compound is already registered in Washington State by your supplier(s).

(3) You do not amend or blend it with additional materials.

If these conditions do not exist, you must use form 4300B to register your product(s).

For detailed instructions, please see reverse side.

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Labels

Requirements

All fertilizers require a label that describes the product. Packaged fertilizers require a label affixed to the package, while bulk fertilizers may be accompanied by a bill of lading that contains all of the labeling requirements or that has the label attached.

All commercial fertilizer labels must contain the following information:

a) The product name, brand, and grade
b) The guaranteed analysis and derivation statement
c) The name and address of the registrant
d) The net weight
e) The Washington State Internet statement

a) Consistency in the listing of the **Brand, Name and Grade** of the product is important. Inconsistencies between the name given to WSDA and labeling in the marketplace can generate regulatory attention. The wording of the name of the product is taken from the 4300B form and entered into the WSDA database. If this differs from the actual label in use there may be initial confusion of the registration status of the product.

With some exceptions, the product's grade must be listed in whole numbers such as 1-2-3 and not fractional numbers such as 1.5-5.0-3.5. For exceptions, see "Grade" in the Definition section. "Grade" only represents Nitrogen (N)-Phosphorus (P_2O_5)-and Potassium (K_2O) or more commonly know as N-P-K. When signifying any other nutrient with the grade, use pluses (+), the percentage amount and the elemental abbreviation, such as in this example: Blue Bird 10-20-20+14S (*for Sulfur)*+5Fe (*for Iron)*+ 9Zn (*for Zinc).* The elemental abbreviations are: Ca-Calcium, S-Sulfur, Mg-Magnesium, B-Boron, Cl-Chlorine, Co-Cobalt, Cu-Copper, Fe-Iron, Mn-Manganese, Mo-Molybdenum, Na-Sodium and Zn-Zinc.

b) The **guaranteed analysis** lists all nutrients guaranteed in the product. All nutrients mentioned on the label must be guaranteed. The format for the guaranteed analysis is:

Guaranteed Analysis

Total Nitrogen(N)……..…….5%
1% ammoniacal nitrogen
1% nitrate nitrogen
1% water insoluble nitrogen
2% Urea Nitrogen
Available Phosphoric Acid(P_2O_5)…10%
Soluble Potash (K_2O)……..…….15%.
Iron (Fe)……..1%
1% chelated iron

Zero guarantees shall not be made and shall not appear in the guaranteed analysis section.

List micronutrients after N P K.

When nutrients other than N, P and K are guaranteed, they must:

(1) be at or above the percentages listed in Table 4, and
(2) be listed in the order found in Table 4.

Table 4. Micronutrient Guarantee Minimums*

Element	%
Calcium (Ca)	1.0000
Magnesium (Mg)	.5000
Sulfur (S)	1.0000
Boron (B)	0.0200
Chlorine (Cl)	0.1000
Cobalt (Co)	0.0005
Copper (Cu)	0.0500
Iron (Fe)	0.1000
Manganese (Mn)	0.0500
Molybdenum (Mo)	0.0005
Sodium (Na)	0.1000
Zinc (Zn)	0.0500

*Hydroponic and other continuous feed fertilizers are exempt from minimum micronutrient guarantees.

A **warning** or **caution** statement may be required on the label for any commercial fertilizer containing more than 0.1% boron or more than 0.001% molybdenum. The following are example statements:

1) This fertilizer contains boron, which may be injurious to certain crops. Contact your local county agent or field consultant for specific information.

2) WARNING: This fertilizer carries added borax and is intended for use only on alfalfa. Its use on any other crops or under conditions other than those recommended may result in serious injury to the crops.

3) Molybdenum: CAUTION: This fertilizer is to be used only on crops which respond to molybdenum. Crops high in molybdenum are toxic to grazing animals (ruminants).

The derivation statement immediately follows the guaranteed analysis section. This statement provides the source for each nutrient guaranteed. This section should be listed as “Derived From” or “Sources of Nutrients Claimed” on your label. The fertilizer sources should be from recognized source materials, and no Brand names should be used.

c) The registrant’s **company name and address**

d) The **net weight** of the product must be in pounds or ounces. You may provide the metric measurement as well; however, the U.S. measurement must be on the label. If the product is a liquid, the net contents can be listed; however, the weight per gallon must also be provided.

e) **Washington State Internet Statement**

All fertilizer labels distributed in Washington State must contain one of the three following statements:

"Information received by the Washington State Department of Agriculture regarding the components in this product is available on the Internet at http://agr.wa.gov/." OR,

"Information regarding the contents and levels of metals in this product is available on the Internet at http://agr.wa.gov/." OR,

"Information regarding the contents and levels of metals in this product is available on the Internet at http://www.regulatory-info-xx.com." Each registrant must substitute a unique alphanumeric identifier for "xx." This statement may be used only if the registrant establishes and maintains the Internet site and the Internet site meets the following criteria:
(1) There is no advertising or company-specific information on the site:
(2) There is a clearly visible, direct hyperlink to WSDA's Internet site.

Organic Claims

Product labels that contain organic claims must be consistent with the following definitions under the Commercial Fertilizer Rule:

Organic- a material containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth. When the term "organic" is utilized in the label or labeling of any commercial fertilizer, it shall be qualified as either "**synthetic organic**" or "**natural organic**," with the **percentage** of each specified. The exception being if organic is used in the brand name in a manner that does not misrepresent the product.

Natural organic means a material derived from either plant or animal products containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth.

Synthetic organic means a material that is manufactured chemically (by synthesis) from its elements and other chemicals, containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth.

Using these definitions, a product which is comprised solely of bone meal, kelp and/or other natural organics could claim “100% natural organic” or “all natural

organic." Products which contain a portion of their material as organic must list the actual percentage of that material, i.e., "95% natural organic." The same is true for synthetic organic claims.

Certified organic or certified-for-use for organic production statements must be approved by the WSDA Organic Food Program. The Organic Program web site address is http://www/wa/gov/agr/fsah/organic/ofp.

Natural mineral materials used as fertilizers such as limestone, rock phosphate, borax, gypsum or greensand cannot be "organic" according to the fertilizer rule definition.

Because the above minerals do not contain carbon atoms, they do not meet the following definition: "Organic means a material containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth". "Organic" does not mean pure or natural. "Organic" products still must be assessed the same as all other fertilizers.

Slow-Release Format

There are several approved formats for guaranteeing slow-release fertilizers. The most commonly used forms are listed below. For additional information, you may obtain an American Association of Plant Food Control Officials (AAPFCO) publication, which lists all other formats. See the contact information section for AAPFCO's address.

Examples of Nitrogen GA Formats

Guaranteed Analysis

Total Nitrogen (N).....5%
3% ammoniacal nitrogen
2% urea nitrogen*

Derivation Statement must have a source of urea and ammonium

* 2% slow release nitrogen derived from methyenediurea. (MDU)

Guaranteed Analysis

Total Nitrogen (N)*....5%
3% ammoniacal nitrogen
2% water soluble nitrogen

Derivation Statement must have source of ammonia and a water soluble nitrogen
*X% slow release nitrogen derived from bone meal (or whatever the source is).

Guaranteed Analysis

Total Nitrogen (N)*……5%
2.5% ammoniacal nitrogen
2.5% nitrate nitrogen
Available Phosphate (P_2O_5)*…..3%
Soluble Potash (K_2O)*…….1%

Derivation Statement must have source of ammonia and nitrate nitrogen, as well as phosphate and potassium

*The nitrogen, phosphate and potash materials in this product have been coated to provide 4% coated slow release nitrogen (N), 2% coated slow release available phosphate (P_2O_5), and 1% coated slow release soluble potash (K_2O).

Guaranteed Analysis

Total Nitrogen (N)……..5%
3% ammoniacal nitrogen
2% Sulfur coated urea nitrogen

Derivation Statement must have a source of Sulfur-Coated Urea (SCU) and ammonia.

Bulk Fertilizer Labeling

If a commercial fertilizer is distributed in bulk, including truckloads and railcar loads, a written or printed statement meeting the labeling requirements must accompany the delivery and be supplied to the purchaser at the time of delivery. This can be accomplished by attaching an approved label to the Bill of Lading (BOL), or incorporating the required labeling elements on the BOL.

Liming Material Labels

Liming material labels must include the entire applicable general labeling information. In addition, all liming material labels must include in the guaranteed analysis section the percentage of calcium or magnesium expressed as carbonate (CaCO3 or MgCO3); the calcium carbonate equivalent (CaCO3 eq) as determined

by methods prescribed by the Association of Official Analytical Chemists (AOAC); and the minimum percentage of material that will pass respectively a one hundred mesh, sixty mesh, and ten mesh sieve. The mesh size declaration may also include the percentage of material that will pass additional mesh sizes.

Types of Claims Prohibited on Fertilizer Labeling

Do not use the following words and phrases on fertilizer labeling: "Safe for Children and Pets", "Safe for the Environment", "Fish Friendly", "Environmentally Friendly", "Complete Fertilizer", "Balanced Fertilizer", or "Contains all Nutrients for Plant Growth" (when the product only has NPK).

The reason for prohibiting such label claims is that “the dose makes the poison”. Used incorrectly, in the wrong place, at the wrong time, or at the wrong rate, any fertilizer could be unsafe to people, pets, the environment or fish. “Complete” or “balanced” fertilizer has no common definition that the public understands. Refrain from making these types of claims.

Department of Ecology Questionnaire and Review

If the fertilizer product(s) you are registering meet the definition of a waste-derived or micronutrient fertilizer (see below and in the definitions section), you must identify it accordingly. These products are required by law to undergo a review by Ecology in addition to the review conducted by WSDA. Ecology may require additional analytical testing (see below) before your product can be registered for distribution in Washington State. The Department of Ecology sends information about the products to the Washington State Department of Labor & Industries and Department of Health for review regarding worker safety and health concerns.

What Exactly is a "Waste-Derived" Fertilizer?

Fertilizers derived in whole or in part from solid wastes or hazardous wastes as defined by laws and rules are considered waste-derived. The applicable laws and rule are the following: Chapter 15.54 RCW requires that all waste-derived and micronutrient fertilizers submit the analytical test results for 9 heavy metals; Chapters 70.95 and 70.105 RCW define solid waste; and Chapter 15.54.270 RCW defines waste-derived fertilizers and micronutrients. The Department of

Ecology adopted the review criteria for fertilizer into the Dangerous Waste Regulations under 173-303-505 Washington Administrative Code (WAC).

Solid and hazardous wastes include not only industrial-type wastes such as used acids, chemical production wastes and air pollution emission dusts, but also includes biological wastes such as animal parts, manures, feathers and other non-hazardous wastes. Remember, if your product contains even a small amount of waste-derived material, *the entire product is considered waste-derived*.

What Are the Additional Tests Required by Ecology?

Two analytical tests are required for the review and registration of waste-derived and micronutrient fertilizers. Tests on the fertilizer using the Toxicity Characteristic Leaching Procedure (TCLP) for metals and/or the Halogenated Organic Compounds (HOC) are the Initial Criteria used by Ecology for the review of these types of fertilizer products. The Ecology Questionnaire included in this registration package provides details about the methodologies for conducting these analyses.
BE AWARE the TCLP metals test required for Ecology's review is a distinct and separate analysis from the metals analysis required by the Department of Agriculture.

If I conducted the TCLP & HOC tests on my products last year, do I need to conduct them again?

YES! However, in the future, Ecology may choose to forgo a repeat of these analyses for products that have not been reformulated or changed sources of raw materials since they were last tested.

Are These Analyses Required for ALL Waste-Derived and Micronutrient Fertilizers?

NO! The Department of Ecology also provides for Secondary Criteria, which allows Ecology to focus its review on the ingredients and processes used for manufacturing a fertilizer. Registrants of waste-derived fertilizers utilizing certain wastes such as biological wastes may submit a complete list of ingredients and the sources of those ingredients in place of the analytical test results (Initial Criteria) discussed above. Biological wastes include, but are not limited to, bone meal, blood meal, feather meal, fishmeal, manures, and poultry litter.

Questions? Call Miles Kuntz, WA State Department of Ecology, (360) 407-6748, or e-mail miku461@ecy.wa.gov

Fertilizer Product Distribution & Reporting

Bulk Commercial Fertilizer Distribution License

This annual license is required for each location (whether in or out of state) that distributes bulk fertilizer in Washington State. The application is completed through the Department of Licensing's Master License System as an endorsement to the Master Business license. There is a fee of $25/location. Whenever fertilizer is distributed within the state, the name and address shown on the license shall appear on all labels, pertinent invoices and storage facilities.

All bulk fertilizers used in blending fertilizer for distribution must first be registered with WSDA. A bulk fertilizer license-holder may also register fertilizer materials and fertilizer blends if they are not already registered

Tonnage Reporting

Any registrant or licensee that distributes a fertilizer to non-registrants or non-licensees in Washington State must report tonnage and pay inspection fees to WSDA. Tonnage fees are assessed semi-annually: July 1st through December 31st and January 1st through June 30. The fee for fertilizer materials is $0.30 per ton; the fee for lime materials is $0.15 per ton. When more than one registrant or licensee is involved in the distribution of a commercial fertilizer, the last registrant or licensee distributing to non-registrants or non-licensees is responsible for completing the tonnage report and paying the appropriate fees.

The Washington State Commercial Fertilizer Tonnage Report forms should arrive at your business by June 1st and December 1st. If you do not received these forms by the above dates, call the Tonnage line at (360) 902-2080.

Fertilizer Product Database

WSDA's fertilizer product database provides information on the metals concentrations of each of the nine heavy metals (arsenic, cadmium, cobalt, mercury, molybdenum, lead, nickel, selenium and zinc) for which Washington State has developed soil-loading standards. Registrants may list a higher concentration than actually found by the laboratory in order to build in a safety factor. All calculations are based on these numbers multiplied by the state default application rates or the labeled maximum application rate. Metals concentrations for each registered product is accessible to the public at this web site. Fertilizer products may be searched by product name or by registering company. The name,

address, and telephone number of the registrant and the guaranteed analysis of the product are listed when a product is selected in the database.

Secondary Containment

Washington State has requirements regarding the secondary containment of liquid and dry bulk fertilizers. Secondary Containment Rules were developed in 1994. As of March 1, 1999, all parts of The Fertilizer Bulk Storage and Operational Area Containment Rules, WAC - 16-201, were in effect. These standards are designed to protect groundwater and other natural resources from fertilizer storage accidents resulting in contamination. WSDA periodically inspects fertilizer facilities for compliance with these standards.

WSDA Organic Food Program Registration

The Organic Food Program is separate and distinct from Pesticide Management Commercial Fertilizer Registration. The way these two programs are linked is that fertilizer products first must be approved by Pesticide Management before they can be approved by the Organic Program. To ensure that produce labeled as Organic in this state is grown with approved fertilizer and pesticide products, the Organic Food Program has developed a brand name materials list.

The Brand Name Materials List (BNML) includes products that are registered for use in organic food production. Every material which is manufactured within this state and/or distributed within this state may be registered with the Organic Program for use in organic food production (WAC 16-160-030). Every fertilizer material must be first registered with WSDA Pesticide Management Division. The telephone number for the Organic Program is (360) 902-1877.

Organic Program registration is not required, but is necessary for an appearance on the Brand Name Materials List. Approved materials have been reviewed to verify that all of the ingredients comply with Organic Crop Production Standards, chapter 16-154 WAC (OCPS) and registration guidelines per Registration of Brand Name Materials for Organic Food Production, chapter 16-160 WAC.

Certified organic or certified for use for organic production statements must be approved by the WSDA Organic Food Program. The Organic Program web site address is http://www/wa/gov/agr/fsah/organic/ofp.

Product-Specific Information

Biosolids

(Treated municipal sewage sludge)

Biosolids are processed municipal sewage sludge that can be beneficially recycled. Most are used as soil amendments and are regulated by the Department of Ecology. Unpackaged biosolids are distributed in a loose form and are generally exempt from the fertilizer law and registration. Packaged biosolids are distributed in a container and are regulated as a fertilizer when they make fertilizer claims on the labeling.

Compost

Composts can be plant and/or animal material. Under the fertilizer law if the compost fits the definition of organic waste-derived material (see Definition Section), it is exempt from the law, regardless of the nutrient or plant growth claims. If it is a composted animal manure being sold with a nutrient guarantee and claims to promote plant growth, it is not considered an organic-waste derived material, but a manipulated manure and does require registration. Composts are reviewed by the Organic Food Program.

Potting Soils

Potting soils that do not contain nutrient claims on the product label are not required to be registered as fertilizers. Those potting soils that are sold with nutrient claims are considered fertilizers and are regulated as such. Contact Fertilizer Registration for more information regarding the registration of potting soils.

Pesticide/Fertilizer Combination Products

Products that contain both fertilizers and pesticides, such as **weed & feeds, moss killers** or any other fertilizer that contain a pesticide are considered combination products and must be registered with both the Fertilizer and Pesticide Registration Programs. The registration periods for these programs differ; the pesticide registration period is from January 1 through December 31, while the fertilizer registration period is from July 1 to June 30. WSDA recommends that whenever a combination product is submitted for registration, applications and fees should be submitted for both fertilizer and pesticide registration.

Limes and Gypsum

Lime and gypsum are regulated as commercial fertilizers in Washington State. The yearly tonnage fee for lime is $0.15 per ton, while gypsum is regarded a fertilizer and the yearly tonnage fee is $0.30 per ton.
The difference between gypsum and lime is that gypsum is calcium sulfate and does not change the pH of the soil. Lime does change the pH of the soil. Most

lime is calcium carbonate, dolomite lime is calcium and magnesium carbonate. Types of liming materials are compounds such as carbonates, hydroxides and oxides. Limes have specific labeling requirements; see the Labeling section of this handbook and the definition of Guaranteed Analysis (d).

Hydroponic Fertilizers

Special rules apply to the labeling of hydroponic or continuous feed fertilizers. Products labeled solely for hydroponic use may guarantee levels of plant nutrients below the minimum guarantees required for commercial fertilizers. See minimums required in Table 4. It is important for you to determine the maximum application rate for these products and enter it on form 4300B.

Other Analysis Methods

As allowed in the rules (WAC 16-200-7062 (2)) other sample preparation and analysis methods for total concentration of each metal in each commercial fertilizer may be used only under the following conditions:

(a) You must submit a request to the Department, in writing, detailing the sample preparation methods, minimum detection limits and quality assurance, quality control documentation and a side-by-side comparison of the analysis results from the alternative method to one of the approved methods' analysis results of the same material; and

(b) The Department, after reviewing the request, may approve the sample preparation or accuracy of the applicable method listed.

The Department is interested in your feedback on the analysis methods. If your laboratory or technical personnel think that there are better methods of analysis, please submit your views in writing to the Department.

Customer Formula Mixes (CFMs)

A CFM must be formulated and mixed according to each customer's requests. This mix is blended in bulk for only one customer to use; it cannot be resold without first being registered. All of the commercial fertilizer products going into the blend must be registered with the Department. The end product (CFM) can be bagged for the one customer, if requested. The CFM must have labeling attached with all the elements of the label included. The CFM mix-formulas and records must be kept for one year.

"CFM" is registered as a product with other fertilizers on the 4300B Form. All customer formula mixes that are sold under one brand name such as Blue Bird are considered one product. No specific guaranteed analysis or metals are required on the form because the "CFM" can only be made from registered fertilizers.

Products Considered Non-Plant Food Materials

Phosphorous acid does not provide P_2O_5 and is not considered a valid source of phosphate for plant nutrition. The product can be converted with time to elemental phosphorus. The percentage of elemental (P) can be listed under the Available P_2O_5 in the guaranteed analysis as Elemental Phosphorus but that elemental amount cannot be used in the Guaranteed Analysis. Materials such as humic acids and lignosulfonates are generally not recognized as plant food sources. Micronutrients can be chelated with lignosulfonate but lignosulfonate is not considered an allowable source of sulfate. Definitions of plant food sources are found in the WSDA law and rule and in the AAPFCO handbook (see Contact section).

Fertilizer Registrants need to be aware that statements on fertilizer product labeling suggesting pesticide, adjuvant, fungicide, or disinfectant activity are considered claims that necessitate the product also be registered with WSDA as a pesticide, adjuvant, fungicide or disinfectant.

Contact Information

WSDA

Washington State Department of Agriculture
Pesticide Management Division
1111 Washington Street, NRB - 2nd Floor
P.O. Box 42589
Olympia, WA 98504-2589
Fertilizer Information: (360) 902-2025
Tonnage Information: (360) 902-2080
Fax: (360) 902-2093
E-mail: fertreg@agr.wa.gov

ECOLOGY

Washington State Department of Ecology
Hazardous Waste & Toxics Reduction Program
300 Desmond Drive
P.O. Box 47600
Lacey, WA 98504-7600
Phone: (360) 407-6748
Fax: (360) 407-6715
E-mail: miku461@ecy.wa.gov

AAPFCO

The Official Publication of the Association of American Plant Food Control Officials may be purchased from:
Joel Padmore, AAPFCO-Treasurer
NC Dept. of Agriculture
4000 Reedy Creek Road
Raleigh, NC 27607-6468
Telephone: (919) 733-7366.

Definitions

Brand- a term, design or trademark used in connection with the distribution and sale of one or more grades of commercial fertilizers.

Bulk fertilizer- commercial fertilizer distributed in a non-packaged form such as, but not limited to, tote bags, tote tanks, bins, tanks, trailers, spreader trucks and railcars.

Calcium carbonate equivalent- the acid-neutralizing capacity of an agricultural liming material expressed as a weight percentage of calcium carbonate.

Commercial fertilizers - a substance containing one or more recognized plant nutrient(s) that is used for its plant nutrient content or that is designated for use or claimed to have value in promoting plant growth. Commercial fertilizers also include lime, gypsum, and manipulated animal and vegetable manures. It does not include unmanipulated animal and vegetable manures and organic waste-derived material. Recognized plant nutrients include: primary nutrients (nitrogen, phosphorous, potassium), secondary nutrients (calcium, magnesium, sulfur) and micronutrients (boron, manganese, chlorine, molybdenum, cobalt, sodium, copper, zinc or iron).

Composting- the controlled aerobic degradation of organic waste materials. Natural decay of organic waste under uncontrolled conditions is not composting.

Customer-formula fertilizer- a mixture of commercial fertilizer or materials of which each batch is mixed according to the specifications of the final purchaser.

Distribute- to import, consign, manufacture, produce, compound, mix, or blend commercial fertilizer, or to offer for sale, sell, barter, exchange, or otherwise supply commercial fertilizer in this state.

Distributor- a person who distributes commercial fertilizer.

Fertigation- a method of applying commercial fertilizers with irrigation water to fertilize land or plants.

Fertilizer component- a commercial fertilizer ingredient containing one or more recognized plant nutrients which is incorporated in the commercial fertilizer for its plant nutrient value.

Fertilizer material - a commercial fertilizer that either:
a) contains important quantities of no more than one of the primary plant nutrients: nitrogen, phosphate, or potash;
b) has eighty-five percent or more of its plant nutrient content present in the form of a single chemical compound; or

c) is derived from a plant or animal residue or byproduct or natural material deposit that has been processed in such a way that its content of plant nutrients has not been materially changed except by purification and concentration.

Grade- the percentage of total nitrogen, available phosphoric acid, and soluble potash stated in whole numbers in the same terms, order, and percentages as in the "guaranteed analysis," unless otherwise allowed by a rule adopted by the department. Specialty fertilizers may be guaranteed in fractional units of less than 1% of total nitrogen, available phosphorus or phosphoric acid, and soluble potassium or potash. Fertilizer materials, bone meal, manures, and similar materials may be guaranteed in fractional units.

Guaranteed analysis- (a) Until the director prescribes an alternative form of "guaranteed analysis" by rule, the term "guaranteed analysis" shall mean the minimum percentage of plant nutrients claimed in the following order and form:

Total nitrogen (N)	percent
Available phosphoric acid (P_20_5)	percent
Soluble potash (K_20)	percent

The percentage shall be stated in whole numbers unless otherwise allowed by the department by rule.
The "guaranteed analysis" may also include elemental guarantees for phosphorus (P) and potassium (K).
(b) For unacidulated mineral phosphatic material and basic slag, bone, tankage, and other organic phosphatic materials, the total phosphoric acid or degree of fineness may also be guaranteed.
(c) Guarantees for plant nutrients other than nitrogen, phosphorus, and potassium shall be as allowed or required by rule of the department. The guarantees for such other nutrients shall be expressed in the form of the element. (d) The guaranteed analysis for limes shall include the percentage of calcium or magnesium expressed as their carbonate; the calcium carbonate equivalent as determined by methods prescribed by the association of official analytical chemists; and the minimum percentage of material that will pass respectively a one hundred mesh, sixty mesh, and ten mesh sieve. The mesh size declaration may also include the percentage of material that will pass additional mesh sizes. (e) In commercial fertilizer, the principal constituent of which is calcium sulfate (gypsum), the percentage of calcium sulfate ($CaS0_4.2H_20$) shall be given along with the percentage of total sulfur.

Imported fertilizer - any fertilizer distributed into Washington from any other state, province, or country.

Label- the display of all written, printed, or graphic matter, upon the immediate container, or a statement accompanying a fertilizer.

Labeling- includes all written, printed, or graphic matter, upon or accompanying a commercial fertilizer, or advertisement, brochures, posters, television, and radio announcements used in promoting the sale of such fertilizer.

Licensee- the person who receives a license to distribute a commercial fertilizer under the provisions of this chapter.

Lime- a substance or a mixture of substances, the principal constituent of which is calcium or magnesium carbonate, hydroxide, or oxide, singly or combined.

Manipulation- processed or treated in any manner, including drying to a moisture content less than thirty percent.

Manufacture- to compound, produce, granulate, mix, blend, repackage, or otherwise alter the composition of fertilizer materials.

Maximum acceptable cumulative metals additions to soil- the amount of total metals that can be added to soil over a forty-five-year period of time without exceeding the Canadian standards which have been adopted in RCW 15.54.800(3) as Washington standards for metals.

Maximum application rate- the maximum amount of commercial fertilizer expressed by weight (such as: pounds, ounces, kilograms, or milligrams) or volume (such as: gallons, quarts, fluid ounces, liters, or milliliters) to be applied to an area of a specified size (such as: acres, square feet, hectares, or square meters) in a period of time stated in years.

Micronutrients- are: Boron; chlorine; cobalt; copper; iron; manganese; molybdenum; sodium; and zinc.

Micronutrient fertilizer- a produced or imported commercial fertilizer that contains commercially valuable concentrations of micronutrients but does not contain commercially valuable concentrations of nitrogen, phosphoric acid, available phosphorus, potash, calcium, magnesium, or sulfur.

Natural base- a mixed fertilizer where more than half of the fertilizer materials is natural and where more than half of the sum of the guaranteed primary nutrient percentages is derived from natural materials.

Official sample- a sample of commercial fertilizer taken by the department and designated as "official" by the department.

Organic- a material containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth. When the term "organic" is utilized in the label or labeling of any commercial fertilizer, it shall be qualified as either "**synthetic organic**" or "**natural organic**," with the percentage of each specified.

> **Natural organic** -a material derived from either plant or animal products containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth.

Synthetic organic- a material that is manufactured chemically (by synthesis) from its elements and other chemicals, containing carbon and one or more elements (other than hydrogen and oxygen) essential for plant growth.

Organic base fertilizer- a mixed fertilizer where more than half of the fertilizer materials is organic and where more than half of the sum of the guaranteed primary nutrient percentages is derived from organic materials.

Organic waste-derived material- grass clippings, leaves, weeds, bark, plantings, prunings, and other vegetative wastes, uncontaminated wood waste from logging and milling operations, food wastes, food processing wastes, and materials derived from these wastes through composting. "Organic waste-derived material" does not include products that include biosolids.

Packaged fertilizer- commercial fertilizers, either agricultural or specialty, distributed in non-bulk form.

Person- an individual, firm, brokerage, partnership, corporation, company, society, or association.

Percent or percentage- the percentage by weight.

Produce- to compound or fabricate a commercial fertilizer through a physical or chemical process, or through mining. "Produce" does not include mixing, blending, or repackaging commercial fertilizer products.

Registrant- the person who registers commercial fertilizer under the provisions of this chapter.

Specialty fertilizer- a commercial fertilizer distributed primarily for non-farm use, such as, but not limited to, use on home gardens, lawns, shrubbery, flowers, golf courses, municipal parks, cemeteries, greenhouses, and nurseries.

Ton- the net weight of two thousand pounds avoirdupois.

Total nutrients- the sum of the percentages of total nitrogen, available phosphoric acid, and soluble potash as guaranteed and as determined by analysis.

Washington State Application Rate- is calculated by using an averaging period of up to four consecutive years that incorporates agronomic rates that are representative of soil, crop rotation, and climatic conditions in Washington State.

Waste-derived fertilizer- a commercial fertilizer that is derived in whole or in part from solid waste as defined in chapter 70.95 or 70.105 RCW, or rules adopted there under, but does not include fertilizers derived from biosolids or biosolids products regulated under chapter 70.95J RCW or wastewaters regulated under chapter 90.48 RCW.